

TWO NEW SPECIES OF TUBULIFEROUS THYSANOPTERA FROM INDIA
(THYSANOPTERA, PHLAEOTHIRIPIDAE)T. N. ANANTHAKRISHNAN, *Professor of Zoology, Loyola College, Madras, India****Allothrips* Hood**

Allothrips Hood, 1908, Bull. Ill. State Lab. Nat. Hist., 8(2):361-79. Watson, 1923, Univ. Florida Agr. Exp. Sta., Tech. Bull. 168: 3-100. Priesner, 1949, Bull. Soc. Fouad Ier Entom., XXXIII: 88. Starnard, 1955, Ann. Ent. Soc. America, 48(3): 151-157.

The genus *Allothrips* has hitherto been unrecorded in the Indian region, though it has been known to be worldwide in its distribution. It is characterized by the thick, band-like maxillary stylets, broadly rounded mouth-cone, dilated postocular setae and a 7-jointed antenna, with joint 7 pedicellate, not closely united with 6. *Allothrips* Hood very closely resembles an allied genus, *Pseudocryptothrips* Priesner, which also is apterous, but the latter has an 8-jointed antenna.

***Allothrips indica*, sp. nov.**

Female: Total body length 0.938 mm—1.120 mm. Body bicolorous; head yellowish, except for the dark patches of pigment as in the figure; vertex yellowish brown. Prothorax, abdomen, antennal joints 4-7 brown. Pterothorax, all legs and antennal joint 2, yellow; joints 1 and 3 yellowish brown. Tube golden yellow, brown tipped. Eyes blackish red; dark patches of pigment scattered all along sides of thorax and abdomen.

Head about 1.1 times as long as wide, being 182 μ long in the holotype and 198 μ wide across cheeks and 154 μ wide across eyes. Cheeks straight, eyes small with a few facets. Ocelli absent. Postoculars 22 μ long with dilated tip, placed 13 μ from sides of head and very close to the caudal eye facet. Interocular setae 16 μ long. Other head setae minute, distributed as in the figure. Antenna 1.8 times head length, sense cones well developed and conspicuous, setae pale.

Joints: length (width) in μ —35-38(32-35); 48-53(32-35); 48-53(32); 38-42(28-32); 35-42(28); 32-38(28); 51-61(26).

Mouth cone broadly rounded at tip; length from posterior dorsal margin of head, 126 μ .

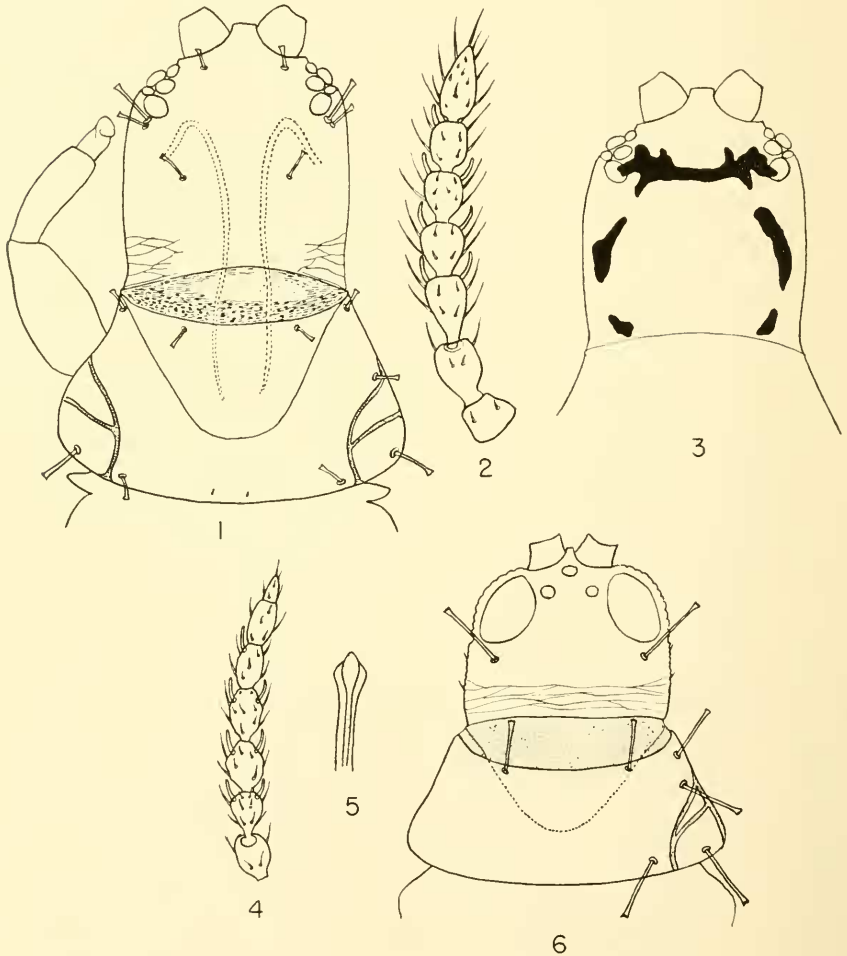
Prothorax 133-140 μ long at middle, 140-168 μ wide at anterior margin and 224-252 μ wide at base inclusive of coxae. Prothoracic bristles well developed, dilated at tips; anteroangulars 29-32 μ ; anteromarginals 29 μ ; mid-laterals 29-32 μ ; postangulars 26-32 μ ; epimerals 29 μ . Median pair of spines on posterior margin very poorly developed. Legs normal, well developed, dilated setae of femur on outer margin, 26 μ long. Foretarsus without teeth. Pterothorax 224 μ wide, slightly less wider than prothorax. Abdomen broad and heavy, widest at middle, about 350 μ wide. Outer setae of IX 99 μ long, pointed inner 64 μ , with dilated tips. Tube 112 μ long, 56-70 μ wide at base and 28-35 μ wide at tip; anal setae 98 μ long.

Habitat: Two females taken from inside dead twigs of *Thevetia neriifolia* by K. S. Ananthasubramanian (7.4.1957), Madras, India (T.N.A. No. 274) (Holotype in the author's collection).

A. indica comes near *A. africanus* Hood, but differs in the general coloration, head 1.1 times as long as wide, short postoculars, antenna 1.8 times head length, and tube 1.6 times head length.

Xylaplothrips Priesner.

Xylaplothrips Priesner, 1928, Thys. Eur., 1:572; 1949, Bull. Soc. Fouad Ier Entom. XXXIII:80; 1950, Bull. Soc. Fouad er Entom. XXXIV:91. Stannard, 1956, Proc. Biol. Soc. Wash., 69:25.



Allothrips indica, sp. nov.: fig. 1, head and prothorax of female; fig. 2, antenna of female; fig. 3, head of female showing patches of dark pigment. *Xylaplothrips nayari*, sp. nov.: fig. 4, antenna of female; fig. 5, apex of pseudovirga of aedeagus; fig. 6, head and prothorax of female.

Xylaplothrips Pr. is generally considered as a subgenus of *Haplothrips*, though as Stannard observes, its status as "subgenus or genus or species complex" is a point of controversy. Though Priesner's separation is based on the placement of the foretarsal tooth at the extreme apex of the tarsus, the new species described below lacks the foretarsal tooth in both males and females. All the same, the delicate, slender body form is characteristic of *Xylaplothrips*.

***Xylaplothrips nayari*, sp. nov.**

Macropteros female: Total body length 1.26—1.4 mm. General colour various shades of yellow and brown. Normal colour: Head, thorax and tube, antennal 4-8 and abdominal pleurites dark brown; antennal joints 1 and 2, IX segment and base of wings and scale lighter brown; joint 3 pale; abdominal segments 1-8 yellowish grey brown, being darker in segments 2-4. Leg coloration variable. All legs uniform dark yellow, except for a brownish tinge at base of forefemora; in some, both fore and midfemora are yellowish at extreme apex and brownish yellow at base. Wings light greyish infumate; fringes brown. Eyes black, ocelli with red pigment; plenty of scattered red pigment on thorax.

Head wider than long, being 112μ long from eyes and 140μ wide across cheeks. Eyes large, $56-63\mu$ long, occupying half the head length or slightly more and 42μ wide. Ocelli well developed, arranged in triangle. Cheeks 56μ long, margin slightly serrate, one or two weak spines. Postocular setae, $48-51\mu$ long, dilated at tip, placed 16μ from cheeks and 13μ below eyes. Antenna nearly 2.4 times as long as head.

Antennal joints—measurements in μ , length(width):—22-29(29-32); 38-42(26-28); 35(22); 38-42(29); 28-42(19); 35(19); 32(16-19); 19-26(10). Prothorax as long as head, 112μ long, $172-196\mu$ wide anteriorly and 238μ wide at base inclusive of coxae. Prothoracic bristles well developed, dilated at tip. Anteroangulars 38μ ; anteromarginals 44μ ; midlaterals 38μ ; postangular $51-54\mu$; epimerals 48μ long. Pterothorax 224μ long, uniformly wide, 238μ . Forefemora slightly enlarged, 70μ wide at middle, inner femoral setae fine 48μ long. *Foretarsus without tooth*. Forewings $532-560\mu$ long, with 5 accessory setae; basal wing bristles $45-48\mu$, 48μ and $70-74\mu$ long respectively.

Abdomen broad at base, gradually narrowing towards extremity; IX abdominal segment 126μ wide and $70-84\mu$ long. Wing retaining bristles well developed in segments 1-6. Tube as long as head, 112μ long, 48μ wide at base and 28μ wide at tip. Anal setae, fine, 70μ long.

Macropteros male:—1.12-1.19 mm. General colour almost as in the female, except for the dark red pigments at the sides of abdominal segments 2-4. Fore- and midfemora similarly coloured brownish yellow at base, rest dark yellowish. Head 112μ long, 126μ wide; eyes 56μ long, 42μ wide; postoculars 48μ long. Antennal joints: length(width) in μ : 22(26-29); 32-38(22); 32-38(22); 38(26); 35-38(19); 35(16-19); 32(16-19); 22(10).

Prothorax $98-112\mu$ long, $140-154\mu$ wide at anterior margin, 196μ wide at base. Prothoracic setae—anteroangulars 32μ , anteromarginals 38μ , mid-lateral 35μ , postangular $48-51\mu$, epimeral $38-42\mu$. Pterothorax length $196-210\mu$; width across mesothorax $196-210\mu$; width across metathorax $168-196\mu$. Forefemoral width 56μ . Wing length $490-504\mu$. Basal wing bristles $38-42$; $38-45$; $48-58\mu$ long.

Abdomen 168μ wide at base, $126-140\mu$ at middle, 84μ wide across IX. Segment IX 70μ long. Tube 98μ long, 42μ wide and 21μ at tip. Anal setae 84μ long.

Habitat: Numerous males and females on bamboo leaf sheaths, *Trivandrum*, collected by Dr. K. K. Nayar, Feb., 1957, Trivandrum, India (T.N.A. No. 290). This species has been named after Dr. Nayar as a token of regard for the constant help rendered to the author.

Dr. Priesner, while confirming *X. nayari* as a new species, points out that it is not far from *pictipes* Bgn. and *incognitus* Priesner, but *nayari* has head much shorter (broader than long), foretarsi unarmed (males and females), eyes larger (as long as cheeks), characteristic coloration, and shorter antennae.

Holotype female and allotype male with the author—Paratypes in the Indian Museum, Calcutta and Priesner's collection.

BOOK REVIEW

ZOOGEOGRAPHY—THE GEOGRAPHICAL DISTRIBUTION OF ANIMALS,

by Philip J. Darlington, Jr. John Wiley & Sons, Inc., New York, xi and 675 pp., 80 figs. Sept. 1957. \$15.00.

This book is a masterpiece of thoroughness and precision, as well as a landmark for zoogeography. It is the first comprehensive treatment of the subject in 80 years—since Wallace's foundation in "The geographical distribution of animals". An interesting aspect is that though it is by an entomologist, it concerns the vertebrate animals almost exclusively. The author did this because vertebrate animals are so much better known than insects. The book has many interesting aspects, including clarity, frankness and fairness of reasoning. Stress is given to geography and history, and four main factors—barriers, competition, dominance and evolution. Darlington emphasizes that animal distribution is a product of movement of animals, not of land, in stressing great age of continents, and in giving evidence against continental drift. The distribution of fresh-water fishes, amphibians, reptiles, birds and mammals is discussed in detailed chapters, followed by treatment of continental and island patterns, evolution of patterns, history of animal distribution, principles of zoogeography and geographical history of man. The maps are original and clear, on orthographic projection. The treatment of islands omits many island groups, although some have few or no terrestrial vertebrates. Almost no mention is made of the fact that insect distribution does not agree with vertebrate distribution in eastern Indonesia, New Guinea, the Solomons and other Pacific islands. Possibly the importance of ecology to zoogeography has been minimized by Darlington, even though he does stress competition and dominance. The strong emphasis on geography and history is of course well warranted. This book will be of the greatest use to entomologists even though island insect patterns, or some of the southern continent insect distribution patterns, may not fit the vertebrate picture.

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